

Best Management Practices

MISSOURI DEPARTMENT OF CONSERVATION



Elephant-ear mussel

Elliptio crassidens

Common name • Elephant-ear mussel

Scientific name • *Elliptio crassidens*

State status • Endangered

Ecology

The elephant-ear is a freshwater mussel species that is widespread but relatively rare in the Midwest. In Missouri, it occurs in the Meramec and Gasconade rivers. It inhabits large rivers with swift current over a stone and coarse gravel bottom.

Mussels are filter feeders that pump water through their siphons to collect food particles from the water. They gather necessary nutrients and remove unwanted toxins from the water through this process. Almost all mussel species depend on a fish host to complete their life cycle. Mature adult mussels release glochidia (the immature stage), which must attach to the gills or fins of fish to complete their development. After an average of 2-4 weeks, the newly metamorphosed juveniles drop from the fish; and if they land in suitable habitat, they will burrow into the substrate and grow to repeat the cycle. Fish are an important link in the reproductive cycle of mussels and, typically, only certain species of fish are suitable hosts. The skipjack herring is the only known fish host for the elephant-ear. Female elephant-ears likely spawn in mid-May and release glochidia from June to July.

Reasons for Decline

The elephant-ear was historically considered uncommon in rivers west of the Mississippi River and abundant east of this great river. However, it is now considered threatened or endangered throughout much of its range. Alteration and degradation of habitat as a result of rural and urban development have adversely impacted this species. Practices such as dam construction, gravel mining, removal of trees and undergrowth along the streambank, and non-point source pollution from agriculture and urban areas have contributed to the decline of this species. These practices have reduced available habitat, increased stagnation of bottom waters, increased siltation and possibly eliminated or reduced fish hosts.

Specific Recommendations

The elephant-ear is limited primarily by habitat. It requires shallow swift-flowing rivers with stone and gravel substrates, and unpolluted, silt-free water.

→ A survey of the waterways in the project area must be conducted by a trained biologist in order to identify occurring populations of this species.

→ Dams and other water impoundment structures that alter substrate composition or water depth should be avoided in creeks and rivers that contain possible habitat for the elephant-ear.

→ No work should be allowed below the high bank of the stream between May 1 and July 31 to allow for successful reproduction and recruitment.

→ Avoid gravel and stone dredging in creeks and rivers that contain habitat for the elephant-ear.

→ All equipment that enters the waterway should be washed and checked for juvenile zebra mussels before entering another body of water. This will help prevent the spread of this exotic European mussel species that can negatively affect native aquatic organisms and kill mussel species like the elephant-ear.

General Recommendations

Refer to Management Recommendations for Construction Projects Affecting Missouri Streams and Rivers.

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